



720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

MEMORANDUM

DATE: June 30, 2015
TO: Bob Galati, City of Sherwood
FROM: Garth Appanaitis, PE
Sina Videi, EI

SUBJECT: Sherwood TSP Project Cost Estimate Refinement

P15024-000

This memorandum summarizes the key assumptions and process used to refine “planning level” project cost estimates for 58 projects included in the Sherwood Transportation System Plan (TSP). The cost estimates were updated to improve consistency¹ (using a standard template with unit assumptions) and provide an updated look at the total costs of transportation projects for programming future funding needs. Overall, the refined total cost of all the projects resulted in a \$38 million increase from the original estimations included in the TSP, which takes into account current building costs as well as increased contingencies to address uncertainties at the early planning stages. The following sections summarize the general methodology and key assumptions.

Background

Sherwood’s TSP includes 109 motor vehicles, pedestrian, and bicycle projects. The costs estimates for TSP projects were generally developed for prior planning efforts and used a variety of unit costs and assumptions. Updated costs (which account for current unit costs and include assumptions about cost components) are needed to help the City program existing transportation resource and prepare for potential funding opportunities and grant applications. In addition, these costs establish baseline needs that could inform future rate studies.

Cost Estimates

DKS refined costs for approximately half of the projects (29 motor vehicle and 29 shared-use path projects) identified in the TSP. Each cost estimate was prepared in a single-page template with costs identified various elements, which each include quantities and unit costs. The primary source for the unit cost estimations came from Portland Bureau of Transportation’s (PBOT) 2015 Estimate Template Master, which provides a relatively comprehensive and current basis for costs².

¹ The original project costs estimates for projects listed in the TSP came from a variety of sources.

² Some units were converted to more appropriate units to simplify the cost estimates.

Quantities for each project were estimated based on the project extents and/or individual needs. Along with unit cost of construction items, site preparation costs were estimated as a percentage of the sum of the non-lump sum construction costs. Furthermore, contingency and engineering and design costs were calculated as the percentage of the sub-total construction costs. Lastly, land acquisition costs were estimated as \$15 per square feet. The total of all these costs are the estimated project costs.

Project Sheets

Project summary sheets were created for all 58 projects that include information for each project: project name, map of the project area, ranking criteria, project type, priority, description, and the total project cost. The cut sheet template is the same template as that used in the Capital Improvement Projects (CIP). All of the motor vehicle projects examined as part of this exercise were already included the CIP and were updated to reflect the refined cost estimates. Summary sheets for the shared-use path projects were created.

Results

The results of the cost estimates are listed in Appendix A. The overall cost for all 58 projects is approximately \$180 million, an increase of \$38 million from the original estimates. Specifically, the costs for project groupings in the TSP have the following changes for the subset of projects considered³:

- Short-Term (Conservative Funding) – Refined cost \$13 million (increase from \$11 million)
- Medium-Term (Projected Funding) – Refined cost \$77 million (increase from \$55 million)
- Long-Term (Aspirational) – Refined cost \$89 million (increase from \$77 million)
- Total TSP Projects – Refined cost \$180 million (increase from \$142 million)

The refined cost estimates include higher contingencies to account for the unknown elements that are more likely to be present with the early planning stages of these projects. As projects are further developed with better information and more certainty, contingency costs may decrease.

By mode, the subset of projects with updated costs have the following changes (Appendix A):

- Driving projects – Refined cost \$138 million (increase from \$90 million)
- Pedestrian and bicycle projects – Refined cost \$42 million (decrease from \$53 million)

³ These totals represent the 58 projects that were updated as part of this analysis and do not include the full list of projects identified in Sherwood's TSP (Volume 2, Section E). Other projects not included in the set of 58 refined projects (such as sidewalk infill or bike lane striping) may also be included in each funding scenario (short-term, medium-term, long-term) but not be accounted in these totals. In addition, the funding scenarios in the TSP may include separate assumptions about potential agency partnerships for some projects. Therefore, the totals listed here are for illustrative purposes only and do not represent the full funding scenarios summarized in the TSP.

Appendix A - TSP Project Cost Estimate Comparison

TSP Project	Refinement Cost Estimate	Previous Cost Estimate	Difference
Driving Projects			
D3	\$ 2,623,413	\$ 1,389,000	\$ 1,234,413
D4	\$ 10,155,747	\$ 2,286,000	\$ 7,869,747
D5	\$ 13,775,908	\$ 3,060,000	\$ 10,715,908
D6	\$ 8,454,093	\$ 8,760,000	\$ (305,907)
D7	\$ 5,532,749	\$ 6,340,000	\$ (807,251)
D8	\$ 6,155,470	\$ 6,712,000	\$ (556,530)
D9	\$ 4,547,377	\$ 3,802,000	\$ 745,377
D11	\$ 8,532,750	\$ 13,000,000	\$ (4,467,250)
D12	\$ 4,257,125	\$ 3,243,000	\$ 1,014,125
D14	\$ 15,451,784	\$ 1,404,000	\$ 14,047,784
D15	\$ 6,812,674	\$ 8,316,000	\$ (1,503,326)
D16	\$ 215,906	\$ 214,000	\$ 1,906
D17	\$ 102,813	\$ 1,000	\$ 101,813
D18	\$ 4,259,374	\$ 2,000,000	\$ 2,259,374
D20	\$ 10,919,535	\$ 6,400,000	\$ 4,519,535
D21	\$ 13,943,186	\$ 8,190,000	\$ 5,753,186
D22	\$ 3,711,505	\$ 2,800,000	\$ 911,505
D23	\$ 2,328,256	\$ 2,000,000	\$ 328,256
D24	\$ 937,193	\$ 900,000	\$ 37,193
D26	\$ 605,936	\$ 250,000	\$ 355,936
D27	\$ 1,702,588	\$ 779,000	\$ 923,588
D28	\$ 1,999,932	\$ 300,000	\$ 1,699,932
D29	\$ 3,202,650	\$ 3,400,000	\$ (197,350)
D30	\$ 2,562,343	\$ 750,000	\$ 1,812,343
D31	\$ 906,755	\$ 100,000	\$ 806,755
D32	\$ 226,466	\$ 250,000	\$ (23,534)
D33	\$ 508,322	\$ 750,000	\$ (241,678)
D34	\$ 138,945	\$ 50,000	\$ 88,945
D35	\$ 3,160,297	\$ 2,167,000	\$ 993,297
Subset (Driving)	\$ 137,731,092	\$ 89,613,000	\$ 48,118,092
Trail Projects			
B1	\$ 1,172,367	\$ 950,000	\$ 222,367
B10	\$ 1,021,013	\$ 601,000	\$ 420,013
B12	\$ 170,353	\$ 347,000	\$ (176,647)
P2	\$ 5,938,495	\$ 1,090,000	\$ 4,848,495
P4	\$ 366,781	\$ 209,000	\$ 157,781
P6	\$ 1,273,618	\$ 2,123,500	\$ (849,882)
P7	\$ 435,976	\$ 292,000	\$ 143,976
P8	\$ 303,946	\$ 219,000	\$ 84,946

MEMORANDUM TSP Cost Estimates

June 30, 2015

Page 4 of 4

TSP Project	Refinement Cost Estimate	Previous Cost Estimate	Difference
P9	\$ 495,319	\$ 365,000	\$ 130,319
P10	\$ 529,091	\$ 365,000	\$ 164,091
P11	\$ 4,650,409	\$ 7,005,000	\$ (2,354,591)
P12	\$ 1,438,318	\$ 1,770,000	\$ (331,682)
P14	\$ 1,347,898	\$ 2,540,000	\$ (1,192,102)
P15	\$ 1,867,725	\$ 4,216,000	\$ (2,348,275)
P16	\$ 2,372,653	\$ 2,738,000	\$ (365,347)
P17	\$ 3,690,738	\$ 11,697,000	\$ (8,006,262)
P20	\$ 1,287,891	\$ 327,000	\$ 960,891
P24	\$ 929,411	\$ 191,000	\$ 738,411
P26	\$ 6,412,057	\$ 13,300,000	\$ (6,887,943)
P33	\$ 36,838	\$ 15,000	\$ 21,838
P36	\$ 1,350,200	\$ 496,000	\$ 854,200
P37	\$ 1,191,593	\$ 421,000	\$ 770,593
P38	\$ 932,281	\$ 262,000	\$ 670,281
P39	\$ 337,550	\$ 93,000	\$ 244,550
P40	\$ 514,362	\$ 149,000	\$ 365,362
P41	\$ 273,037	\$ 140,000	\$ 133,037
P42	\$ 218,430	\$ 112,000	\$ 106,430
P43	\$ 1,125,166	\$ 327,000	\$ 798,166
P46	\$ 588,596	\$ 201,000	\$ 387,596
Subset (Ped and Bike)	\$ 42,272,112	\$52,561,500	\$ (10,289,388)